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SEP 08

TECH CENTER



1600

RAW SEQUENCE LISTING

DATE: 08/29/2003

PATENT APPLICATION: US/09/699,136A

TIME: 14:19:41

Input Set : A:\010025-01 SEQ LISTING.DBF.TXT

Output Set: N:\CRF4\08292003\I699136A.raw

4 <110> APPLICANT: SANTI, Daniel
 5 PECK, Lawrence
 6 KEALEY, James
 7 DAYEM, Linda
 9 <120> TITLE OF INVENTION: Heterologous Production of Polyketides
 12 <130> FILE REFERENCE: 010025.01
 14 <140> CURRENT APPLICATION NUMBER: 09/699,136A
 15 <141> CURRENT FILING DATE: 2000-10-27
 17 <150> PRIOR APPLICATION NUMBER: 60/161,703
 18 <151> PRIOR FILING DATE: 1999-10-27
 20 <160> NUMBER OF SEQ ID NOS: 6
 22 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 24 <210> SEQ ID NO: 1
 25 <211> LENGTH: 1917
 26 <212> TYPE: DNA
 27 <213> ORGANISM: Propionibacterium freudenreichii ssp.shermanii
 29 <400> SEQUENCE: 1

ENTERED

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32 aaggtactca accgtggctg tccaccggag aagcagttga ccttcgccga gtgtctgaag 180
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34 gccccgaaga agctgggtta ccccggcgtc gcacctttca cccgcgcac cacggtgcgc 300
35 aacggcgaca tggatgacct ggacgtgcgc gccctgcacg aggatcccga cgagaagttc 360
36 acccgcaagg cgatcctcga aggcctggag cgtggcgtca cctccctggt gctgcgcgtt 420
37 gatcccgacg cgatcgaccc cgagcacctc gacgaggtcc tctccgacgt cctgctggaa 480
38 atgaccaagg tggaggtctt cagccgctac gaccaggggt ccgccgccga ggccctgggtg 540
39 agcgtctacg agcgtctcca caagccggcg aaggacctgg ccctcaacct gggcctggat 600
40 cccatcgctg tcgcagccct gcagggcacc gagccggatc tgaccgtgct cggtgactgg 660
41 gtgcgccgcc tggcgaagtt ctgcgcggac tcgcgcgccg tcacgatcga cgcgaacatc 720
42 taccacaacg ccggtgcccg cgacgtggca gagctcgctt gggcactggc caccggcgcg 780
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47 cttcgcggtt cgattgccac cttctccgcc tccgttggtg gggccgagtc gatcacgacg 1080
48 ctgcccttca cccaggccct cggcctgccg gaggacgact tcccgtgctg catcgcgcg 1140
49 aacacgggca tcgtgctcgc cgaagaggtg aacatcggcc gcgtcaacga cccggccggt 1200
50 ggctcctact acgtcgagtc gtcaccccg agcctggccg acgcccctg gaaggaattc 1260
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56 cgtcgcgact tcggtggccg cgagggtctt tcgagcccg tgtggcâcat cgccggcatc 1620
57 gacaccccg aggtcgaagg cggcaccacc gccgagatcg tcgaggcatt caagaagtcg 1680
58 ggcgcccagg tggccgacct ctgctcgtcc gccaaagtct acgcgcagca gggacttgag 1740
59 gtcgccaagg cactcaaggc cgccggcgca aaggccctgt acctgtcggg cgccctcaag 1800
60 gagttcgtg atgacgccg cgaggccgag aagctgatcg acggacgcct gtttatgggc 1860
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63 <210> SEQ ID NO: 2
64 <211> LENGTH: 2187
65 <212> TYPE: DNA
66 <213> ORGANISM: Propionibacterium freudenreichii ssp. shermanii
68 <400> SEQUENCE: 2
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70 gccgcacgac gcttcgagga actggccgcc aaggccggca ccggagaggc gtgggagacg 120
71 gccgagcaga ttccggttgg caccctgttc aacgaagacg tctacaagga catggagatg 180
72 ctggacacct acgcaggatc cccgccgttc gtccacggcc cgtatgcaac catgtacgcg 240
73 ttccgtccct ggacgattcg ccagtacgcc ggtttctcca cggccaagga gtcgaacgcc 300
74 ttctaccgcc gcaaccttgc ggccggccag aaggccctgt cggttgcctt cgacctgccc 360
75 acccaccgtg gctacgactc ggacaatccc cgctcgcgcg gtgacgtcgg catggccggt 420
76 gtggccatcg actccatcta tgacatgcgc gagctgttcg ccggcattcc gctggaccag 480
77 atgagcgtgt ccatgaccat gaacggcgcc gtgctgccga tcctggccct ctatgtggtg 540
78 accgccgagg agcagggcgt caagcccgag cagctcgcgc ggacgatcca gaacgacatc 600
79 ctcaaggagt tcatggttcg taacacctac atctaccgcg cgacgccgag tatgcgaatc 660
80 atctctgaga tcttcgccta cacgagtgcc aatatgccga agtggaaattc gatttccatt 720
81 tccggtacc acatgcagga agccggcgcc accgccgaca tcgagatggc ctataacctg 780
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83 gcgcgcgtc tgccttctt ctggggcatc ggcatgaact tcttcatgga ggttgccaag 900
84 ctgcgtgccg cgcgcagtgt gtggggcaag ctggtgcac agttcggggc gaagaacccg 960
85 aagtcgatga gcctgcgcac cactcgcag acctccggtt ggtcgtgac cgccaggac 1020
86 gtctacaaca acgtcgtgcg tacctgcac gagccatgg ccgccacca gggccatacc 1080
87 cagtcgctgc acacgaactc gctcgacgag gccatcgccc tggcgaccga tttcagcgcc 1140
88 cgcacgccc gtaacacca gctgttctc cagcaggaat cgggcacgac gcgcgtgatc 1200
89 gaccctgga gcggctcggc atacgtcag gagctcacct gggacctggc ccgcaaggca 1260
90 tggggtcaca tccaggaggt cgagaaggtc ggcgcatgg ccaaggccat cgaaaagggc 1320
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95 aaccccgacg acaaggatcc ggatcgcaac ctgctgaagc tgtgcatcga cgctggccgc 1620
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97 gccagattc gcaccatctc cgtgtgttac tcgaaggaag tgaagaacac gcctgaggtt 1740
98 gaggaagcac gcgagctcgt tgaggaattc gagcaggccg agggccgtcg tcctcgcac 1800
99 ctgctggcca agatgggcca ggacggtcac gaccgtggcc agaaggtcat cgccaccgcc 1860
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101 gcacgtcagg ccgtcgaggc cgatgtgcac gtggtgggcg ttctcgtcgt cgccggcggg 1980
102 catctgacgc tggttccggc cctgcgcaag gagctggaca agctcggacg tcccagacatc 2040
103 ctcatcaccg tggcgcgct gatccctgag caggacttcg acgagctgcg taaggacggc 2100
104 gccgtggaga tctacacccc cggcacctgc attccggagt cggcgatctc gctggtcaag 2160
105 aaactcggg cttcgtcga tgcctag 2187
107 <210> SEQ ID NO: 3

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108 <211> LENGTH: 1851

109 <212> TYPE: DNA

110 <213> ORGANISM: Streptomyces cinnamonensis

112 <400> SEQUENCE: 3

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115 acggccgcag aggaagcgct gtccaccacc ctcgaggacg ggctcaccac ccgccccctg 180
116 tacaccgcgc gcgacgccgc gcccgacgcc ggtttccccc gcttcgcccc ttctcgtcagg 240
117 ggttccgtcc ccgagggcaa caccgcgggc ggctgggacg tccggcagcg gtacgcgagc 300
118 gccgatcccc cgcgacacaa tgaagcggtc ctaccgatac tggagaacgg cgtcacctcg 360
119 ctctggctga cgctgggctc cgccggtctt ccggtcaccg gtctggagcg tgcgctcgac 420
120 ggctctacc tcgacctggt gcccgctcgc ctcgacgcgg gcagcgaggc cgcgaccgcc 480
121 gcccgggagt tgctgcgcct gtacgaggcc gcgggctcgc ccgacgacgc ggtgcgcggc 540
122 acgctcggcg ccgaccgcgt cggccacgag gcccgaccg gggagaagag cacctccttc 600
123 gcggcggtcg ccgaactggc ccggtctgtc ggggagcgct accccggtct gcgcgcgctg 660
124 accgtggacg cgctgccgta ccacgaggcg ggtgcctccg ccgcgcagga gctcggcgcc 720
125 tcgctcgcca ccggtgtcga gtatctgcgc gccctgcacg acaagggtct cggtgtcag 780
126 aaggccttcg cgcagctgga gttcagggtc gcggccaccg ccgaccagtt cctcaccatc 840
127 gccaaactgc gcgcgcgcgc ccgcctctgg gcgcgtgtcg ccgaggtgtc cggggtgccg 900
128 gccgcggggg cgcagcggca gcacgcggtg acctcgccgg tgatgatgac ccgccgcgac 960
129 ccgtgggtga acatgctgcg gaccaccgtg gcgtgcctcg gcgcgggtgt gggcggtgcc 1020
130 gacgccgtca cggctcctgcc gttcgaccac gagctcgggc tgccggacgc gttcgcgcgc 1080
131 cgcacgccc gcaacacgtc gacgatcctc ctcgaggagt cgcacctcgc gcgtgtcatc 1140
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133 tgggacttct tcaaggagat cgagcgcgcg gacggtcagg tcgcggcgct ccgctccggc 1260
134 ctggtcggcg accggatcgc cgcgacctgg gccgagcgca ggaagaagct ggcccggcgc 1320
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136 gagccgcgc ccgcgcgcc gcccgcggt ctgcccggg tgccgcgca cgaggcgtac 1440
137 gaggagctgc gcggcgctc ggacgcgcac ctggaagcga ccggcgccc cccgaagggtg 1500
138 ttcacgcgc cgctggggcc ggccgcgcgc 'cacacggcgc gcgcgacgtt cgccgccaac 1560
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140 gccgcgagg cgttcgcggc gagcggcgcc accgtcgcgt gcctctgctc cagcgacgtg 1680
141 ctctacgcc agcaggcgga agcggctcgc cgggccctga agtcggcggg cgcgctgcgg 1740
142 gtgttctcgc cggggcgcg ggagttcgcc gacatcgacg agtacgtctt cgcgggctgc 1800
143 gacgcggtcg cgggtgtcac ctccaccctc gaccgcatgg gagtggcgta a 1851

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145 <210> SEQ ID NO: 4

146 <211> LENGTH: 2202

147 <212> TYPE: DNA

148 <213> ORGANISM: Streptomyces cinnamonensis

150 <400> SEQUENCE: 4

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153 tgggagacgc ccgagggcat cgcggtcaag ccgctgtaca cgggcgcgca cgtcgagggc 180
154 ctggacttcc tggagacgta cccgggtgtc gcgcgctatc tgccggcccc ctaccgacg 240
155 atgtacgtga accagccgtg gacgatccgg cagtacgcgg gattctccac cgccgaggag 300
156 tccaacgcct tctaccgcc caacctcgcg gcaggccaga aggggtcttc ggtcgccttc 360
157 gacctgcccc cgcaccgcg gtacgacagc gaccaccgc gcgtcaccg tgacgtcggc 420
158 atggcgggcg tggccatcga ctccatctac gacatgcgtc agctcttcga cggcattccg 480
159 ctggacaaga tgacggtgtc gatgacgatg aacggtgccg tgctgcccg tctcgcgctg 540

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162 atgcggatca tctccgacat cttcgcgtag acgtcgcgaga agatgccgcg ctacaactcc 720
163 atctcgatct ccggctatca catccaggag gcgggcgcgga cggccgacct ggagctggcg 780
164 tacacgctcg ccgacggtgt ggagtacctg cgagccgggc aggagggcggg cctggacgtg 840
165 gacgcgttcg cgccgcggct ctcttcttc tgggcgatcg gcatgaactt cttcatggag 900
166 gtcgccaagc tccgcgcggc gcgcctgctc tgggcgaagc tcgtgaagca gttcgacctg 960
167 aagaacgcca agtccctctc cctgcgcacc cattcgcgaga catcgggctg gtcgctgacc 1020
168 gcgcaggacg tggtcaacaa cgtcacgcgc acgtgtgtcg aggcgatggc ggcgacgcag 1080
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171 cggacgatcg acccgtaggg cggcagcgcg tacgtcgaga agctgacgta cgacctggcg 1260
172 cgccgcgcct ggcagacat cgaggaggtc gagcgggcg gcggcatggc gcaggccatc 1320
173 gacgcgggca tcccgaagct gcgcgtcgag gaggccgcgg cgcgacacca ggcgcgcac 1380
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178 gcggcccggg cgaaggccac ggtcggtag atctccgac cactggagag cgtgtacggg 1680
179 cggcacgcgc gccagatccg tacgatctcc ggtgtgtacc gcaccgaagc aggccagtcg 1740
180 ccgagcgtgg agcgcacgcg tgccctggtg gacgcgttcg acgaggccga ggggcgcagg 1800
181 ccgcgcaccc tcgtcgcgaa gatgggtcag gacggccacg accgcggtca gaaggtgatc 1860
182 gcgagcgcc tccgcgacct gggcttcgac gtcgacgtcg gcccgtgtt ccagacgccg 1920
183 gcggaggtcg cgcgccaggc cgtcgaggcg gacgtgcaca tcgtcggcgt ctctcgctt 1980
184 gccgcagggc acctaccctt cgtaccggca ctgcgcgagg agctggccgc ggagggccgc 2040
185 gacgacatca tgatcgctgt gggcgcgctc atcccgcgc aggacgtcga ggccctgcac 2100
186 gaggcggcg ccacggcggt gttcccgcgc ggcacggtga tcccggacgc ggcgcacgac 2160
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189 <210> SEQ ID NO: 5

190 <211> LENGTH: 447

191 <212> TYPE: DNA

192 <213> ORGANISM: Propionibacterium freudenreichii ssp. shermanii

194 <400> SEQUENCE: 5

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196 gacgaggctt ccaagtacta ccaggagacc ttcggctggc atgagctcca ccgcgaggag 120
197 aaccgggagc agggagtcgt cgagatcatg atggcccgcg ctgcgaagct gaccgagcac 180
198 atgaccagag ttcaggatcat ggccccgctc aacgacgagt cgaccgttgc caagtggctt 240
199 gccaaagcaca atggctcgcg cggactgcac cacatggcat ggcgtgtcga tgacatcgac 300
200 gccgtcagcg ccaccctgcg cgagcgcggc gtgcagctgc tgtatgacga gcccaagctc 360
201 ggcaccggcg gcaaccgcat caacttcatg catcccaagt cgggcaaggg cgtgctcatc 420
202 gagctcacc agtaccgcaa gaactga 447

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204 <210> SEQ ID NO: 6

205 <211> LENGTH: 148

206 <212> TYPE: PRT

207 <213> ORGANISM: Propionibacterium freudenreichii ssp. shermanii

209 <400> SEQUENCE: 6

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211 1 5 10 15

212 Cys Pro Asp Ala Asp Glu Ala Ser Lys Tyr Tyr Gln Glu Thr Phe Gly

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215		35		40		45
216	Ile Met Met	Ala Pro Ala Ala	Lys Leu Thr Glu His	Met Thr Gln Val		
217		50		55		60
218	Gln Val Met	Ala Pro Leu Asn Asp	Glu Ser Thr Val Ala	Lys Trp Leu		
219	65		70		75	80
220	Ala Lys His	Asn Gly Arg Ala Gly	Leu His His Met	Ala Trp Arg Val		
221		85		90		95
222	Asp Asp Ile	Asp Ala Val Ser Ala	Thr Leu Arg Glu Arg	Gly Val Gln		
223		100		105		110
224	Leu Leu Tyr	Asp Glu Pro Lys Leu	Gly Thr Gly Gly	Asn Arg Ile Asn		
225		115		120		125
226	Phe Met His	Pro Lys Ser Gly Lys	Gly Val Leu Ile	Glu Leu Thr Gln		
227		130		135		140
228	Tyr Pro Lys	Asn				
229	145					

VERIFICATION SUMMARY

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